The Anchorage Amateur Radio Club News Bulletin

December, 1995 | Anchorage Amateur Radio Club Newsletter | Vol. 24, No. 12
Editor - Harvey Rookus, NL7DK

The Anchorage Amateur Radio Club Christmas Party!

December 1st, 6 pm

Atwood Center, Alaska Pacific University

- Turkey and Ham and Santa and LIVE ENTERTAINMENT will be provided!
- Bring the following:
  - Novice: Vegetables
  - Tech: Hot Dish
  - General: Salad
  - Advanced: Bread, Appetizers....
  - Extra: Dessert
- Don't Forget to Bring Your Family
- Special Door Prizes/Christmas presents will be given away!

Inside

From The General Minutes

By: NL7NN, Susan Woods

The General Meeting of the Anchorage Amateur Radio Club, Inc. was held on the 3rd of November 1995. Our President, Rob Wilson, AL7KK called the meeting to order at about 7:10 pm. Introductions and announcements were made. John Bury, KL7QZ is our Membership Chairman.

The VHF/UHF Committee Chairman, Doug Dickinson, KL7IKX, said that the 35 amp Power Supply for the KL7ION repeater has been replaced with a 50 amp Supply. The 147.30 + repeater draws a constant 27 amps. KL7AA's VHF as well as UHF repeaters are on the list for upkeep and maintenance.

Our Treasurer, John Lawson, NL7NC, reported that the AARC received $4700 from Boniface Bingo, Inc. as proceeds from September 1995. In the Gaming account we have $44,500 and $5100 in the Club Checking account. The application process for our 1996 Gaming Permit is under way. We are still working on the taxes for 1994/1995.

KL7ITI, Bill moved that the 1996 AARC Budget be approved with changes, if any, noted in the Newsletter. WL7IZ seconded the motion. After a small amount of discussion as to where the Operating Budget comes from the motion passed without objection.

According to Larry Strain, N7DF, the 1996 Arctic Winter Games will be held in Eagle River during the second week of March. There will be twelve or thirteen different venues scattered throughout Anchorage. They are expecting between 1500 to 2000 athletes, 1000 members of the media, and about 1500 Volunteers. Larry is hoping to include many Hams among the volunteers during the Arctic Games. If you are interested, please give Larry a call at his home number, 338-2718.

Our annual Christmas Party will be held on the 1st of December in the Atwood Bldg on the second floor (the same place where our meetings are held). Those that plan to attend, please bring the following according to your license class:

Novice - Vegetables
Technician - Hot Dish
General - Salad
Advanced - Bread or appetizers
Extra - Dessert

All club members and their families are invited to attend.

Before our President, Rob, got down to the business of conducting the election,, he called for nominations from the floor. Nominations received included those of : Susan Woods, NL7NN and Larry Walters, KL7IWC for Secretary; John Lawson, NL7NC for Treasurer; Kris O'Connor, WL7ZT and Larry Walters, KL7IWC for Activities Manager; John Ziv, NL7YM, John Fierello, WL7CCQ, and Kyle, AL7QE for one year Board Members.

The new members of the Anchorage Amateur Radio Club Board are as follows:

President - Larry Strain, N7DF
Vice-President - Paul Spatzek, WL7BF
Activities Mgr- Kris O'Connor, WL7ZT
Secretary - Susan Woods, NL7NN
Treasurer- John Lawson, NL7NC
3 yr Board Member
Mel Saunders, AL7PB Term ends 1998
1 year Board Members
John Bury, KL7QZ
Fred Erickson, KL7VC
Patrick Wilke, WL7JA
John Murray, NL7WW
Dianne Hammer, NL7KN
John Ziv, NL7YM

Those who make up the balance of the Board are:

Past Pres. - Rob Wilson, AL7KK
Club Trustee - Bill Reiter, KL7ITI
3 year Board Members
Simon Carraway, NL7VR ends 1997
Lance Dunbar, AL7BK ends 1996

While the club members were waiting for last of the election results to be tallied, Rob Wilson, AL7KK told us about an antenna article he wrote and was published in the October 1995 QST. Rob calls it a OMTA- Offset Multiband Trapless Antenna. It is a tribander built for either 15-20-40 or 17-20-40 meters. He says that Texas Towers called to let him know that their company is running out of aluminum tubing!

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From the Board Meeting by Susan Woods NL7NN

The Board Meeting of the Anchorage Amateur Radio Club, Inc. was held on the 8th of November, 1995. It was held in the Carr-Gottstein Building on tha Alaska Pacific University campus. The meeting began at approx. 7:00 pm. Those present were Rob Wilson, AL7KK, President; Mel Saunders, AL7PB, Vice-President; Susan Woods, NL7NN, Secretary; John Lawson, NL7NC, Treasurer; Simon Carraway, NL7VR, 3 year Board Member; One year board members - Dianne Hammer, NL7KN; Harvey Rookus, NL7DK and Lillian Marvin, NL7DL. Also present were the newly elected members of the incoming Board. They were: Larry Strain, N7DF, President; Kris O'Connor, WL7ZT, Activities Manager; One year Board members - John Ziv, NL7YM; Patrick Wilke, WL7JA; Fred Erickson, KL7VC; John Murray, NL7WW, and John Bury, KL7QZ. Doug Dickinson, KL7IKX, our VHF/UHF Committee Chairman was in attendence as well.

There was discussion as to when the new terms of office begins. According to: Article VIII, Section 1; of the AARC By-Laws, "Elected term of office shall be from Dceember 1st to November 30th".

The minutes of the October, 1995 Board Meeting were read and approved.

Our Treasurer, John Lawson, NL7NC stated that the AARC received $4750 from Boniface Bingo, Inc. as our share of the September, 1995 Gaming proceeds. October, '95 was a good month for Bingo. Our CPA, Nancy Adams is working on the tax return for 1994/95. She has uipgraded her computer program "Quick Book" to version 3.0 and now the AARC will need to upgrade from version 1.0 to be compatible. The upgraded version should be available from Costco at about $125.

When Richard Mote, AL7MO, was our Activities Manager, he opened a savings account at National Bank of Alaska. This account was to catch overflow from the monthly club door prize drawing. In the account there was a balance of $579.37. There was some discussion as to what should be done with the money.

Gaming looks to be profitable during the last quarter of 1995. If so, we could have twenty to twenty-five thousand dollars to give away at the January 1996 General Meeting.

New signature cards for Club accounts will have to be signed as the AARC changes leadership as of December 1st. The Treasurer reminded the Secretary to bring the Corporate Seal to the next meeting. The Treasurers report was approved.

Some discussion took place as to a telephone call received by our president , Rob Wilson, AL7KK from Nate Smith, KL7DJE. The opinion of the Board is that any business done with the AARC should be in writing.

According to Doug Dickinson, KL7IKX, our VHF/UHF Committee Chairman, Mark Hadley, KL7HD, would like to sell his Amateur Fast Scan Television Repeater. The repeater was in good working condition when it was taken off the air and removed from the location on the Hillside. To return the system to the air would take about 10 hours of work. The possibility of putting the system into one of the trailers given to AARC by the Civil Air Patrol seemed to be agreeable to the board. In a trailer, the ATV repeater would be portable and could be used for numerous races, special events, or to aid in emergency situations. Possible places to locate the trailer were discussed. One place brought up was the Alaska Division of Emergency Services Site at the National Guard Armory on Fort Richardson. Because of the wide band width of Amateur Fast Scan , intermod would be a problem if the repeater were located at one of the KL7AA's present repeater sites.

A Motion was made by Simon Carraway, NL7VR, three year board member that the AARC off Mark Hadley, KL7HD, $999.95 for the Amateur Fast Scan TV Repeater. The motion was seconded by Harvey Rookus, NL7DK, a one year Board Member. The motion passed without an objection.

Our VHF/UHF Committee Chairman, Doug Dickinson, KL7IKX brought up the subjact of crossbanding going on over the AARC Packet BulletinBoard. There were questions raised as to its legality. Our Trustee, Bill Reiter, KL7ITI, being absent, could not respond to questions posed. FCC rules and regulations, along with comments of Doug Dickinson, KL7IKX, about this subject will be forthcoming in the Club Newsletter.

Preparations for the upcoming Christmas party were discussed. The Ham and Turkey as well as plates and eating utensils will be provided. Decorations and music are being attended to. It was decided by the Board that no admission will be charged to attend the party.

A motion was made by Rob Wilso , AL7KK, our president that the $579.37 in the Activity Managers account started by AL7MO, Richard Mote, be used to purchase an ICOM dual band Handi-Talkie to be given away at the AARC Christmas Party. Seconding the motion was Simon Carraway, NL7VR, a three year Board member. The motion passed without objection.

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General Meeting continued
The six doorprizes were won by two people! The meeting adjourned and the socializing continued at O'Bradys Burgers and Brew on Tudor road.
Respectfully submitted by,
Susan J.Woods, Secretary
AARC

Addendum - It was decided at the General meeting that we did not need the services of a full time Bookkeeper because we currently have the services of a CPA and are doing well.
Susan J. Woods, Sec. AARC Inc.

AARC Board Meeting continued
There being no other business, the meeting was adjourned at 8:09 pm on a motion made by Simon Carraway, NL7VR, and secomded by Mel Saunders, AL7PB.
Respectfully submitted by
Susan J. Woods, Secretary AARC

CALENDAR

DECEMBER
XMAS PARTY 1ST
VEC TESTS 6TH
SCARC MEETING 8TH
VEC TESTS 9TH
AARC BOARD MTG 13TH
VEC TESTS 20TH

JANUARY 1996
VEC TESTS 3rd
AARC MEETING 5th
AARC BOARD MTG 10TH
SCARC MEETING 12TH
VEC TESTS 13TH
VEC TESTS 17TH

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Have a safe and

Happy Holiday

season ! Editor

	CALL	FROM	TO
ANCHORAGE			
TERRY T. ALBERT	WL7PT	TECH PLUS	GENERAL
JASON R. ALERY		NO LICENSE	TECHNICIAN
KARREN E. ALLERY		NO LICENSE	TECHNICIAN
ALAN A. BARNSLEY	WL7WW	TECH PLUS	ADVANCED
CHRIS F. BROSH	WL7PV	GENERAL	ADVANCED
CHARLES R. COMER		NO LICENSE	NOVICE
CHARLES R. COMER		NO LICENSE	TECH PLUS
RHODA J. DAVIS		NO LICENSE	NOVICE
SEAN M. GOULD		NO LICENSE	TECHNICIAN
RICHARD GOSHORN	KL7EW	TECHNICIAN	GENERAL
MARVIN P. GREENE		NO LICENSE	TECHNICIAN
LEE E. HACKENBERGER		NO LICENSE	TECHNICIAN
RAYMOND MUNGIU		NO LICENSE	TECHNICIAN
RICHARD M. O'CONNOR (13)		NO LICENSE	TECHNICIAN
MICELE M. OLSON		NO LICENSE	TECHNICIAN
TIMOTHY A. OLSON		NO LICENSE	TECHNICIAN
THOMAS F. PARAGI	WL7YT	GENERAL	ADVANCED
KENNETH L. PITTS		NO LICENSE	TECHNICIAN
SUSAN A. ROSTIN		NO LICENSE	TECHNICIAN
KYLE W. SANDEL	WL7CKW	TECH PLUS	GENERAL
KYLE W. SANDEL	WL7CNZ	TECH PLUS	ADVANCED
TERRY M. SHEDD	WL7SJ	TECHNICIAN	GENERAL
DANIEL SOHN		NO LICENSE	TECHNICIAN
MICHAEL R. WILLOYA		NO LICENSE	TECHNICIAN
BETHEL			
DEAN R. SWOPE	WL7COJ	NOVICE	TECHNICIAN +
BIG LAKE			
BYERS LAKE			
TIMOTHY R. CRAWFORD II		NO LICENSE	TECHNICIAN
RAYMOND P. DE RAMO	WD8DFW	GENERAL	ADVANCED
JAMES D. McQUILLIAMS		NO LICENSE	TECHNICIAN
EAGLE RIVER			
CHARLES R. BERRY		NO LICENSE	TECHNIC[illegible]
CHARLES R. COMER	WL7CNY	TECH PLUS	GENERAL
MICHAEL GARTLAND		NO LICENSE	TECHNICIAN
BOB G. GLOVER (14)		NO LICENSE	TECHNICIAN +
BOB G. GLOVER (14)	WL7COS	TECHNICIAN PLUS	GENERAL
ADAM R. HANSHEW		NO LICENSE	TECHNICIAN
LAWRENCE A. MOCK		NO LICENSE	TECHNICIAN +
KYLE W. SANDEL	AL7QE	ADVANCED	AMATEUR EXT
WILLIAM R. WAKEFIELD		NO LICENSE	TECHNICIAN
FAIRBANKS			
MARYANNE ALLAN		NO LICENSE	TECHNICIAN
WILLIAM E. ANKER		NO LICENSE	TECHNICIAN
LAWRENCE A. BENDALL		NO LICENSE	TECHNICIAN
RONALD A. BROOKS		NO LICENSE	TECHNICIAN
ANITA C. CAGLE		NO LICENSE	TECHNICIAN
DAVID C. FRANGOS		NO LICENSE	TECHNICIAN
JOSEPH W. GILLIS		NO LICENSE	TECHNICIAN
TERRY L. GRIFFITH		NO LICENSE	TECHNICIAN
PETER KRUGER-LARSEN	WL7CNU	TECH PLUS	GENERAL
LWELL R. MEISTER		NO LICENSE	TECHNICIAN
BENJAMIN P. MERCER (11)	WL7CME	NOVICE	TECH PLUS
DARRELL R. NEEDHAM		NO LICENSE	TECHNICIAN
RONALD D. RASMUSSEN		NO LICENSE	TECHNICIAN
JONATHAN A. RICHE(15)	WL7CHT	GENERAL	ADVANCED
AUGUST W. SCHUELKE JR.		NO LICENSE	TECHNICIAN
FLORI STOEBER (16)		NO LICENSE	NOVICE
FLORI STOEBER (16)	WL7CON	NOVICE	TECHNICIAN +
DAVID E. WAYS		NO LICENSE	TECHNICIAN
JUNEAU			
ANDREW L. LIENBACH	NL7BT	ADVANCED	AMATEUR EXT
HAINES			
KENAI			
PALMER			
PETERSBURG			
SOLDOTNA			
TRAPPER CREEK			
VALDEZ			
WASILLA			
DEAN R. SWOPE		NO LICENSE	NOVICE
WILLOW			

NOTE (TECHNICIAN = NO CODE TECHNICIAN)
(TECHNICIAN PLUS = TECHNICIAN WITH H.F. PRIVILEGES)
submitted by Roger Hansen, KL7HFQ, VEC Director)

Important Notes on Crossbanding

Recently there has been an upsurge of UHF/VHF or VHF/UHF cross linking. While this is certainly an interesting use of dual band radio's, there are several considerations that should be kept in mind.

Cross banding to or from a repeater licensed to another amateur is certainly permissible, IF you have cleared the crossband operation in advance, with the licensee, or trustee of the callsign. And there is some way to control your linking activites. So that unwanted signals (intermod, etc) does not lockup the crossband unit, and therefore the repeater your linking to.

In addition, FCC regulations require that you have your control frequency (for repeaters, remote base, and linking systems) above 220 Mhz. This is to say that it is not permissible to control a link, repeater, remote base, etc. on the input frequency if that frequency is below 220 Mhz.

Remote base systems, repeaters, and linking systems are required to ID just like a repeater does. Carrying the repeater, or remote base ID across the link does not meet the requirment of ID'ing the link system. Each transmitter is required to have it's own callsign (ID).

Finally, if your planning on a remote base, or linking system, remember you need to coordinate with the ARRL frequency coordinator, for both your input and output frequencies. It may be that the frequency you have decided to use is in use by another system. Just because you don't hear anyone on the frequency doesn't mean that it's not in use. Some other coordinated user may be ctcss protected, but your crossband may block his or her use of the frequency that they have prior coordination to.

ARRL Frequency coordinator for Alaska is:
KL7GG Mel Bowns @ KL7AA.#NAK.AK.USA.NA
694-9589

Please FIRST check with the licensee, or trustee of the CALL of whatever repeater, or remote base you plan to link into, then please check with Mel, to be sure the frequencies you are planning to crossband to and from are clear.

I like to crossband, I enjoy the advantages but please try to remember the above suggestions. It will make the enjoyment of our hobby more fun for everyone.

73 Doug KL7IKX ARRL OOC.

DUKE UNIVERSITY CHAPEL, located on the campus of Duke University, Durham, is the beautiful gothic structure with a carillon of 50 bells in its 210 foot tower.

Photo by: Jim Doane

© & Pub. by Aerial Photography Services, Inc.
2511 South Tryon St., Charlotte, NC 28203
Printed in USA 704-333-5143

SPENT 2 NITES W/AARL + J.D. They are fine as Emily is a H.S. SENIOR! How time does fly. Am here for my 20 yr DUKE REUNION. 73 Dave KL7LO

AARC
POB 101987
ANCHORAGE, AK
99510

KEEP NORTH CAROLINA CLEAN & BEAUTIFUL

1996 ARCTIC WINTER GAMES

The 1996 Arctic Winter Games will be held in Anchorage the week of March 6-10, 1996. The Official Coordinating Committee has specifically requested the assistance and participation of radio amateurs in the event.

There will be at least 18 sporting events occuring at various locations throughout the Anchorage area. Athletes from at least 8 Arctic Rim countries are expected to participate. Many of these events will need communications assistance at the event as well as communications linking them to the Games headquarters and supporting services. In addition, it has been requested that a Special Events Station be set up to handle radiogram messages from the estimated 1200 plus participants back home (where third party agreements permit).

In order to appropriately provide for all the amateur radio services that the Arctic Winter Games Committee has requested, it is planned to form an AARC Winter Games Committee to coordinate activities. We need to have separate chairpersons in the committee to organize the following services:

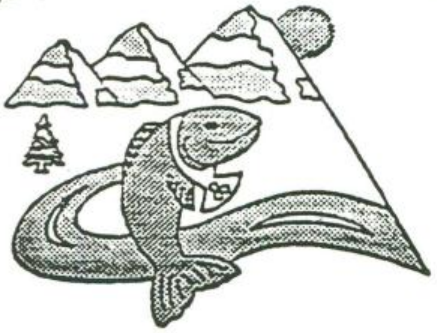
1. Overall communications between activity locations and headquarters
2. Special event station setup, operation and message handling
3. Packet radio for reporting of results and relaying messages
4. Communications for outdoor events such as sled dog races, cross-country skiing, biathlon, snowshoe races and downhill skiing
5. Transportation communications for buses
6. Amateur TV coverage of events
7. Anything else you can think of that would enhance Amateur Radio PR through participation in the Winter Games

The Winter Games Committee has requested that everyone who participates as a volunteer submit a Volunteer Registration Form. A copy of this form is enclosed with this month's newsletter and copies will be available at all AARC meetings and from AARC Winter Games Committee chairpersons, once they are identified. On these forms we will be serving under the SPORTS SERVICES, COMMUNICATIONS COMMITTEE. The forms should be turned in to the AARC Winter Games chairpersons or an AARC officer so they can be submitted as a group to the Arctic Winter Games Committee. Of course, you or any family member can also volunteer for other activities, too. They still need over 700 volunteers for the various activities listed on the back of the form.

To start things off we will have a planning meeting at 6:30 P.M. on December 1 in the Atwood center at APU, just before the AARC Christmas Party. Anyone who wants to serve as a committee chairperson should try to attend this meeting and as many people as possible who want to participate in activities should also attend. Bring your completed Volunteer Registration Forms. Additional information will be available at this meeting and the next meeting of the AARC Winter Games Committee will be scheduled.

This is an outstanding opportunity for everyone in the Club to get involved in Public Service Communications and support AARC and amateur radio; even if you can only spare a few hours. You don't need to own a radio to participate, there will be a lot of things to do that don't require a hand-held. So fill out your Volunteer Registration Form and show up a half-hour early for the Christmas Party!

If you have any questions please call Larry Strain N7DF at 338-2718.



1996
Arctic Winter Games

16515 Centerfield Drive, Suite 102
Eagle River AK 99577
Phone: (907) 694-8866 Fax: (907) 696-8870

Name _____ _____
(Last) (First

Mailing Address: _____

_____
(City, State, Zip)

Phone: _____ _____ _____
(Home) (Work) (Fax)

Age: _____ Male:_____ Female:_____
(If Under 18)

Languages Spoken:_____

First Aide Training: _____

Driver's License Class _____
(Regular, Commercial, Endorsements)

Sport Certification: _____

Computer Skills: _____

Please indicate your main areas of interest. (Be specific on the back of this form)

_____Village Services _____Finance/Administration __X__Sports Services

_____Protocol _____Public Relations _____Sports Competition

_____Cultural

Sports Services – Communications

If already assigned, COMMITTEE NAME: _____

Please Indicate Availability:	**Anytime**	**Morning**	**Afternoon**	**Evening**
Pre-Game Preparations	_____	_____	_____	_____
During Games 3/3-10/96	_____	_____	_____	_____
After Games	_____	_____	_____	_____

Are you willing to volunteer for the emergency pool during the Games? Yes____No___
(A LAST MINUTE PLACEMENT)

Size of volunteer apparel _____Small _____Medium____Large _____XL___XXL

PLEASE NOTE: UNAUTHORIZED VOLUNTEER EXPENSES WILL NOT BE REIMBURSED BY THE 1996 ARCTIC WINTER GAMES HOST SOCIETY

Signature_____ Date:_____

FINANCE/ADMINISTRATION

_____ Fundraising
_____ Merchandising
_____ Procurement
_____ Ticket Sales
_____ Volunteer

PROTOCOL

_____ Awards
_____ Ceremonies
_____ Host/Hostess
_____ Language
_____ Receptions/Banquets
_____ V.I.P.'s
_____ Welcome/Send Off

PUBLIC RELATIONS

_____ Advertising
_____ Event Programs
_____ Media Center
_____ Public Relations
_____ Souvenir Video
_____ Ulu News
_____ Welcome Book

CULTURAL

_____ Arts & Crafts
_____ Social Activities
_____ Entertainment
_____ Film Festival
_____ Galas
_____ Performances
_____ School Curriculum
_____ Visual Arts

SPORTS SERVICES

_____ Accreditation/Registration
__X__ Communications
_____ Officials
_____ Results
_____ Venues

VILLAGE SERVICES

_____ Accommodations
_____ Catering
_____ Medical
_____ Mission Headquarters
_____ Security
_____ Transportation

SPORTS COMPETITION

_____ Alpine Skiing
_____ Arctic Sports
_____ Badminton
_____ Basketball
_____ Ski Biathlon
_____ Cross Country Skiing
_____ Curling
_____ Dog Mushing
_____ Figure Skating
_____ Gymnastics
_____ Hockey
_____ Indoor Soccer
_____ Silhouette Shooting
_____ Snowshoe Biathlon
_____ Snowshoeing
_____ Speed Skating
_____ Table Tennis
_____ Volleyball
_____ Wrestling

CHAIRPERSON: PLEASE RECORD WHEN COMPLETED. THANK YOU.

Orientation _____ Training Session _____

I.D. Tags Issues _____ Clothing _____

Certificate _____ Thank You _____

BID (MID) : 55436_KL7AA
Message # : 55436
Title : Article - ASCII version
From : KB8JXX
To : SYSOP
Type/status : PN
Date/time : 20-Oct 20:26
Bid : 52224_KL7AA
Message # : 52224
Title : News Release for Newsletter
First off I would like to say sorry for it being to large. Second, Would you please forward this to the Newsletter Editor for the KL7AA Club News Letter, Thanks from T.J.
** News Release for Amateur Radio Club Newsletters:
Dear Newsletter Editors: I have sent you 2 versions of this News Release
Hello I'm T.J. Tombleson - KB8JXX "Just Double X" the Project Coordinator" of "Link Alaska" (An amateur radio 2 meter Linked repeater project for South Central Alaska) We are a group of people interested in "Connecting towns and cities together and providing road coverage" over 2 meter band repeaters throughout our area.
UPDATE VERSION: Well I have good news to report in this Update! In our latest efforts to Link Anchorage and Fairbanks together, I recently met up with someone who operates a Bed and breakfast in the Broad Pass area, named "Sourdough Paul". He is eager to help out with the project and also wants to get his ham license. Our simple test included an omnidirectional antenna stuck up 25 feet in a tree, set up right in front of his place, and we were able to hear a pretty clean signal coming from the 145.49 MHz Trapper Creek repeater. There was also a "full quieting" signal coming from the Cantwell - Fairbanks Linked repeater system. The plan is to install a wind generator for power, tower and two radio's to operate as a "Remote Base" (with Paul providing local control, once he gets his license). Sourdough Paul's enthusiasm included volunteering to set up the 2 masting units and the 17 element beam that I left at his place, in hopes that a few hams would be able to help him with for the "antenna raising" and that way there would be someone to also test the path down to Trapper Creek, so we could see how much of an improvement we get over the omnidirectional antenna. There are a few other sites that we are looking at to improve the 2 meter coverage between Trapper Creek and Cantwell, but there is nothing to report at this time.
If you would like to get involved with our project, or help out with the antenna raising project, please call me toll free from anywhere in the state at 1-800-784-7724 or from Anchorage 344-7724. Please mention if you want to get put you on our Link Alaska Newsletter mailing list.
Written by T.J. Tombleson - KB8JXX

Hams Help Recover Stolen Car In Highway Chase

By Jean Leonard

Dave Cloyd (KL7M) · Mike and Rosanne Eppler, (KL7ILA and KL7IRE, respectively) area ham operators, enabled police to apprehend drivers of a car stolen from another ham after a long chase down the Glenn Highway into Anchorage on Saturday, October 21.

Over the ham airwaves on Friday came word that a car had been stolen from AL7LX of the Nancy Lake/Big Lake area with a description of the car and the ham license plate identification.

On Saturday about 11 a.m. the Epplers were in the parking lot at Cottonwood Mall in Wasilla and saw AL7LX's car and waited to say hello, not knowing the car had been stolen. When a strange woman and man got into the car they called the owner who said her car had been stolen. Soon the Epplers came over the 147.30 repeater with word they were following the car inbound toward Anchorage on the Glenn Highway coming up on Peters Creek. Cloyd answered the call and contacted the police establishing a link through him between the police and the Epplers.

The police dispatcher sent patrol cars after verifying on the computer that the car was stolen. The Epplers were urged to keep a distance and not put themselves at any risk or break speed laws. Doing so, they still managed to keep the dispatcher informed on locations as the stolen car passed North Birchwood, the Eagle River exits and neared the weigh station just out of Anchorage where two patrol cars pulled the stolen car over.

There was a tense moment when the driver of the stolen car suspected she was being followed and took an Eagle River exit off and back onto the Glenn Highway presumably to check the following car.

It also got time-crucial as the car neared Anchorage where it would have been easy to lose it.

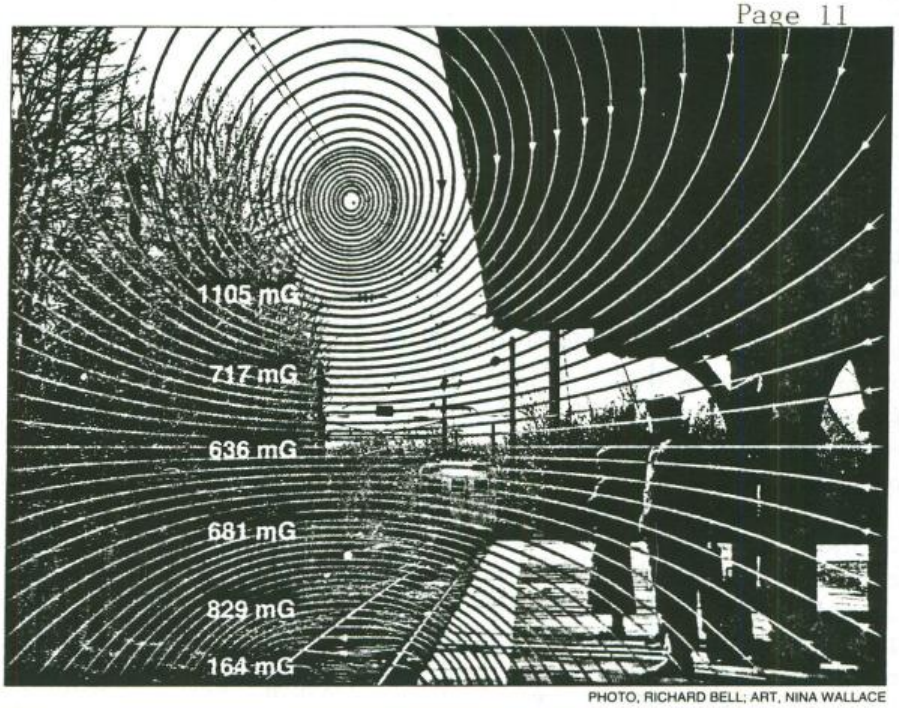
But all was working right, and people listening in were happy to hear the arrests had been made and Cloyd was signing off in order to call the owner of the stolen car and tell her it had been found.

In an interview, Cloyd said the ham license plates are helpful in cases like this. Such plates were made legal for ham operators after their heroic efforts during the 1964 earthquake.

Another good piece of luck is that the driver and passenger being pursued were not ham educated enough to be listening to the whole thing on the radio of the car they were driving.

Moral of this story? Hams look after each other, so car thieves beware. Congratulations to the Epplers and Cloyd.

ALLRIGHT, JUST WAIT AND SEE IF I EVER LET YOU BE ON CANDID ATV AGAIN!



PHOTO, RICHARD BELL; ART, NINA WALLACE

Magnetic fields from electrified railroads. Current at about 500 amps flows through the trolley wire and is returned in equal amounts by the rails. The high-field region is between the wire and the rails.

act usefully with the Earth's static magnetic field. Chains of magnetite particles in certain anaerobic bacteria have been found to induce the microbes to swim toward the bottom of a pond, away from oxygen. Such an interaction may also be responsible for navigation in honeybees, green turtles, carrier pigeons, and other animal species.

The interaction of a single magnetite particle, such as that found in the human adrenal gland, with a 10 mG field typical of power lines would be so meager as to be totally swamped by thermal effects. Even with substantial chains of magnetite in tissue, any interaction with 60-Hz fields would be almost completely damped out by viscosity effects.

The only other way for low-frequency magnetic fields to interact with the body is through the Faraday effect. Faraday's law states that an electromotive force is induced in a closed conducting loop by a changing magnetic flux. A uniform 10 mG field at 60 Hz would produce an internal electric field of 19 microvolts per meter over a circular loop 10 cm in radius. Such an internal electric field would be comparable in magnitude to one produced by direct coupling of external electric fields from power lines through the skin. These field magnitudes are much too small to be of serious consequence.

Field Effects at the Cell Level Are Small

Some have argued that adverse effects could arise from the interaction of externally applied fields and natural processes such as calcium ion transport at the cell membrane. To evaluate this possibility, it is important to estimate the size of an induced internal field at the membrane. The net result is to amplify the field in the coupling process.

By solving static field equations for a dielectric spherical shell immersed in a uniform electric field, the net amplification can be shown fairly rigorously. However, the main effect can be seen just by noting that the voltage drop across a spherical cell takes place almost entirely in the high-resistance membrane. The cytoplasm is highly conductive, like the extracellular fluid.

For the electric field, which by definition is the voltage drop per unit distance, the amplification factor is about equal to the ratio of the cell radius to the membrane thickness. Assuming a cell radius of 10 μm and a membrane thickness of 50 Å, the membrane field will be about 3000 times the external field.

In my worst-case electric field limit (the fellow standing on the railroad tracks with bare feet in the rain), where the internal field is 80 microvolts per meter, the membrane field would be increased to about 0.24 volts per meter. The 10 mG magnetic field from a distribution line that induced an electric field of 19 μV/m over a circular loop 10 cm in radius within the body electrolyte (by the Faraday effect) would result in a field of 0.057 V/m in the cell membrane.

For comparison, the worst-case 650 mG magnetic field encountered on the 25-Hz Amtrak line gives values of 0.5 millivolts per meter for the internal field and 1.5 volts per meter for the membrane field induced by the same 10-cm current loop, whereas the peak 300 mG field found on the 60-Hz New York-New Haven line would result in an internal field of 0.57 millivolts per meter and a membrane field of 1.7 volts per meter. Hence the largest induced fields at the membrane level that might reasonably be anticipated from extended ELF sources are in the range of about 1 to 2 volts per meter. These fields are very small compared to those that are naturally present in the body.

Natural Fields and Thermal Noise Overwhelm Man-Made Effects

Several major sources of fields are unavoidable. The Earth's magnetic field is one of them. It seems to be produced by circulating currents of uncertain origin deep within the Earth's crust. Its magnitude varies from 300 mG at the Equator to 700 mG at the poles, with a representative value in the continental United States of about 450 mG. Its value has fluctuated widely during human evolution, and it has reversed itself many times over geologic history.

The Earth's magnetic field is enormous compared to magnetic fields near ground level from urban distribution lines and high-voltage power lines. However, it is roughly comparable to the peak magnetic fields encountered from a few home appliances and in Amtrak trains during bursts of acceleration. Still, the Earth's field itself is negligible compared to some man-made fields that are used for medical purposes without any deleterious effect. The static fields used in magnetic resonance imaging, for example, are typically 50,000 times larger than the Earth's field.

The Earth has a static electric field of about 120 volts per meter in the downward direction. This arises from a net negative surface charge, thought to result from bipolar charge separation during ice crystal formation in clouds. The charge is transferred to the ground by lightning bolts, of which there are about 40 million a day worldwide. The Earth's electric field is thus somewhat larger than that found under typical 12-kV distribution lines, but several times smaller than electric fields found at head level along railroad tracks.

Electric fields from normal biologic activity can be millions of times larger than those induced by external electromagnetic fields. The voltage drop across the Purkinje cell membranes in heart muscle fibers is about 0.09 volts, and nerve cell membranes typically have potential drops of about 0.05 volts across them. For a membrane thickness of 50 Å, the corresponding fields occurring naturally across the membrane would be about 10 million volts per meter. That should be compared to the 1 or 2 V/m worst-case fields induced in the membrane at power-line frequencies.

Large electric fields are also produced within the human body by thermodynamic processes. The most important of these is the biologic equivalent of resistor noise, or "Johnson noise," discovered in the 1920's by J. B. Johnson of Bell Laboratories. Noise arises in a resistor because of Brownian movement of electrons and ions, and an equation given by Harry Nyquist relates it to a frequency band. Applying Nyquist's formula to cells

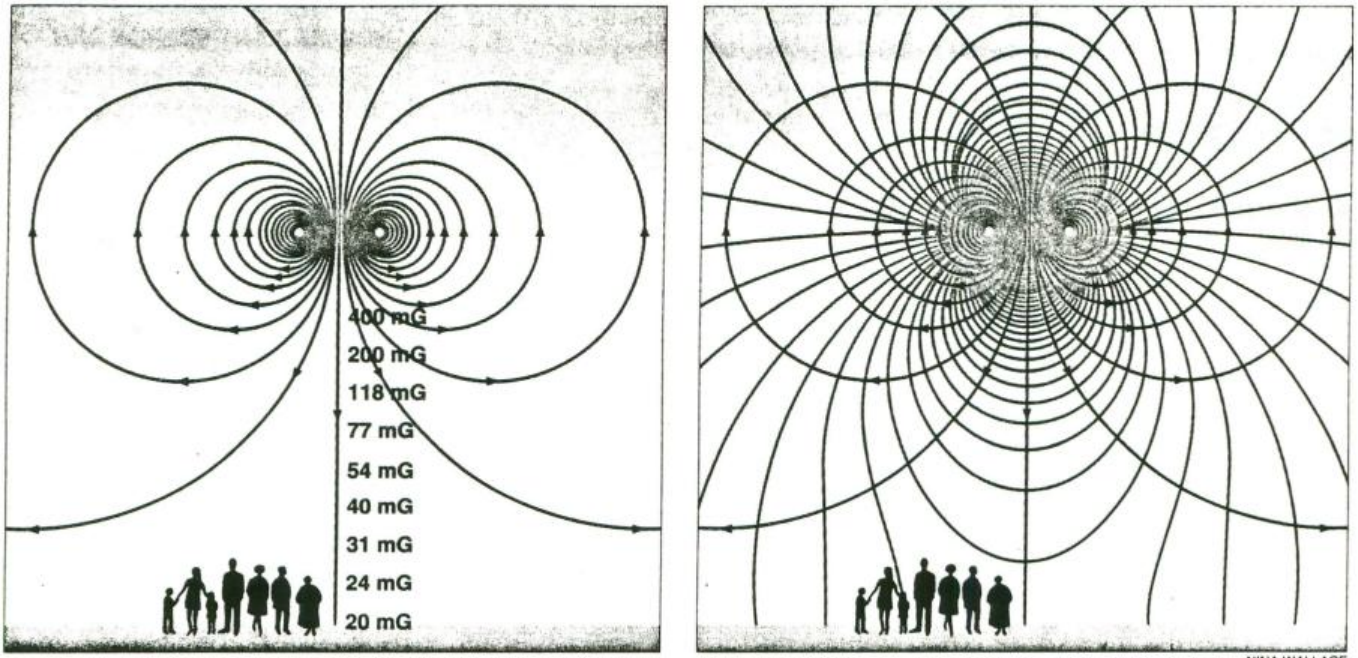
HOW RADIANT ENERGY CAN DAMAGE CELLS

Ultraviolet radiation of the appropriate wavelength or frequency can be absorbed by biologic molecules such as DNA and can cause chemical changes in the molecules. Ionizing radiation (x-rays and high-energy atomic particles) can break DNA chains.

Biologic molecules must be reasonably stable at body temperature. From thermodynamics, the expression for their binding energy is kT = 4.3×10^{-21} joule = 0.027 electron volts = 0.62 kcal per mole, where k is Boltzmann's constant and T is the absolute temperature in the body (298 K).

To disrupt the weak bonds determining the structure of a biologic molecule, the absorption energy must be large compared to kT. Niels Bohr postulated in 1913 that radiation interacts with atoms in steps of hv, or the Planck energy per photon, where h is Planck's constant (6.6×10^{-34} joule-seconds or 3.1×10^{-15} electron volt-seconds) and v is the photon frequency in Hertz.

So the frequency has to be greater than kT/h = 6.4 terahertz for photodissociation or photo-ionization to occur. Frequencies in the terahertz range are thousands of times higher than even microwave generators produce, so cellular phones cannot cause brain cancer.



Fields from a two-wire power distribution line, characteristic of many rural areas. The parallel wires are about 10 meters above the ground and about 2 meters apart. The magnetic field is shown in the *left panel* and both fields in the *right panel*. The highest fields are between the two wires. Both fields drop off as $1/r^2$ at large distances (r) from the wires. Three-phase distribution lines commonly used in urban areas have three and sometimes four parallel wires, producing fields that vary spatially with time over the period of the line frequency. Just as in the two-wire case, these fields drop off as $1/r^2$ at large distances from the wires. The electric and magnetic fields are completely independent of each other (or "uncoupled"). The magnetic field depends only on the current through the line and hence on the load. The electric field is independent of the load and determined merely by the voltage applied between the wires. No radiation occurs at the line frequency.

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and assuming a bandwidth of 100 Hz gives a "Johnson noise" of 0.02 volts per meter.

This value is about 40 times the internal electric field coupled into the barefoot boy on the train tracks and about 1000 times larger than that estimated for a power line. To induce a field of 0.02 V/m at the cell level would require an external electric field of at least 3 million V/m. A person immersed in so large a field would glow in the dark and interfere with AM radio reception by coronal discharge (ionization of air).

Thermal noise in the cell membrane is of still greater interest. The large membrane resistance isolates the inside of the cell electrically from the outside. Because the fluids inside and outside are highly conductive, the membrane sandwiched between two equipotential surfaces can be regarded as a simple resistor for the purpose of calculating membrane noise. Assuming the cell is spherical, the thermal noise field in the membrane over a bandwidth of 100 Hz should be about 280 volts per meter. The main uncertainty is the membrane resistance, and it is of interest that some workers have found noise measurement in a known bandwidth to be one of the best ways to determine membrane resistance.

These results show that even naturally occurring thermal fields in the cell membrane are hundreds of times larger than the worst-case fields from ELF power lines and home appliances.

Resonance Effects Are Unlikely

It has been suggested that the body might respond more strongly to a steadily oscillating 60-Hz field than to a randomly fluctuating field of the same magnitude. For that to happen there would have to be some highly resonant effect at the power line frequency. Such a mechanism could not operate simultaneously in the United States at 60 Hz and in Europe at 50 Hz. No convincing evidence for such a resonance has been offered, and the electrical properties of biologic materials vary extremely slowly with frequency in the ELF and VLF range.

Proposals for mechanisms such as cyclotron resonance in Earth-level fields in calcium ion migration through membrane channels simply do not make any sense physically. Here, the basic notion is that ions would move in circular orbits in the Earth's magnetic field and be accelerated by a low-frequency time-varying electric field coupled in

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